UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

DEC 2 8 2009

Colonel Thomas Chapman, District Engineer
U.S. Army Corps of Engineers, Sacramento District
1325 J Street, 14th floor
Sacramento, California 95814-2922

Subject: Public Notice (PN) SPK-2009-01197 for the proposed 2-Gates Fish Demonstration Project, Contra Costa and San Joaquin Counties, California

Dear Colonel Chapman:

Thank you for the opportunity to review PN SPK-2009-01197 dated October 30, 2009 regarding the 2-Gates Fish Demonstration Project in Contra Costa and San Joaquin Counties, California. We prepared following comments under the authority of, and in accordance with, the provisions of the Federal Guidelines (Guidelines) promulgated at 40 CFR 230 under Section 404(b)(1) of the Clean Water Act (CWA).

We have determined the proposed project does not comply with restrictions to discharge as detailed in the Guidelines and is a candidate for elevation pursuant to the 1992 Memorandum of Agreement between the Environmental Protection Agency (EPA) and the Department of the Army per CWA Section 404(q). The project described in the PN and the application for a CWA Section 404 permit does not comply with the requirements of the Guidelines set out at 40 CFR 230.12(a)(3)(i-iv).

In addition, Mr. Don Glaser, Regional Director of the Bureau of Reclamation, sent a letter dated December 22, 2009, to the applicant in which he states "...scientific reviews of the proposal have identified major questions regarding the scientific assumptions that underpin the project and, as a result, whether the project is likely to produce the desired result and whether it would be cost-effective." We agree with this statement as indicated in our detailed comments attached. For these reasons, we respectfully object to the issuance of a permit for the proposed project as permit authorization **may result** in substantial and unacceptable impacts to aquatic resources of national importance (ARNIs).

We look forward to working with your staff and the applicant to resolve the important environmental issues surrounding the proposed project. If you wish to discuss this matter further, please call me at (415) 972-3572 or Paul Jones, Acting Supervisor of our Wetlands Office at (415) 972-3470.

Sincerely,

for

Alexis Strauss
Director, Water Division

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Enclosure:
Attachment 1: Detailed EPA Comments

cc:

Mr. Ara Azhderian
San Luis and Delta Mendota Water Authority

Mr. Bill Guthrie
USACE, Sacramento District

Ms. Maria Rea
National Marine Fisheries Service, Southwest Region

Mr. Ryan Olah
US Fish and Wildlife Service, Region 8

Mr. Daniel Kratville
CA Department of Fish and Game, Water Branch

Mr. Daniel Werth
RWQCB, Central Valley Region

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Attachment 1
Detailed EPA Comments
PN SPK-2009-01197 for the proposed 2-Gates Fish Demonstration Project

I. Project Description

The San Luis and Delta Mendota Water Authority (applicant) proposes to install two temporary gate structures to reduce entrainment of delta smelt at the Central Valley Project (CVP) and State Water Project (SWP) water export facilities by manipulating flows and turbidity. The proposed project is sited in Old River and Connection Slough adjacent to Bacon Island, located in the Sacramento-San Joaquin Delta (Delta). The project outlined in the PN would result in direct impacts to approximately 2.9 acres of waters of the United States (WOUS), including subtidal waters and tidal wetlands. Impacts would result from dredging, placement of up to 21,000 cubic yards (5,700 Old River; 15,300 Connection Slough) of crushed rock in the channel bottom, installation of 175-foot wide gates mounted on steel barges, and installation of sheet pile walls. When open, the gates would reduce the channel width to 75 feet in Old River and 60 feet in Connection Slough, which constitutes an 80-90% reduction in channel width[1]. When closed, the gates would completely cut off flow across the gate structures, essentially creating a dead-end channel. Operation of the gate structures in the proposed project would affect water and organism movement throughout the entire central Delta.

The applicant has proposed an operations schedule for when the gates would be opened and closed. According to the PN, the gates would remain open between April 1-May 31, and July 1-Novemeber 30. Between early December and early March, the gates would be closed 0.5 to 2.5 hours daily. During March and June the Old River gate would be closed on flood tide (twice daily, about 10 hours daily) and open on ebb and slack tides (about 14 hours daily). The Connection Slough gate would be closed approximately 20 hours daily and would be open only during ebb tides (about 4 hours daily) during March and June. The applicant has conducted modeling on hydrodynamics and turbidity, as well as smelt behavior to support the proposed operations schedule. In addition, the applicant has proposed numerous "triggers" that would dictate the exact timing of gate closures. Triggers include turbidity, temperature, average daily flow, and presence of delta smelt.

The applicant describes the project as a demonstration that would include monitoring and an adaptive management plan. The Draft Environmental Assessment (DEA) describes a "scientific investigation program and monitoring plan" that would be used to understand the effects of the proposed project. Proposed monitoring under this plan includes components for both water quality (flow, temperature, turbidity, salinity, chlorophyll-a) and biology (fish surveys, fish entrainment). In addition, the DEA presents a general adaptive management framework. However, at this time, EPA is not aware of a fully developed fish monitoring plan or adaptive management plan that will be implemented post-construction to evaluate impacts of the project and make decisions regarding gate operations.

[1] Percent reduction of channel width estimated based on figures in the DEA and Corps PN. Current channel dimensions were not found the DEA or PN.

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II. NEPA Compliance/Public Review Process

EPA is generally concerned with the level of coordination and public review the project has undergone. Although the Bureau of Reclamation (federal lead agency) prepared a Draft Environmental Assessment/Finding of No Significant Impact, the analysis included in the DEA is insufficient to support a "Finding of No Significant Impact"; an EIS may be warranted.

The DEA discusses a number of projects occurring in Delta, but provides minimal analysis on the cumulative impacts of these projects. It is unclear how the proposed project was coordinated with these and other efforts in the Delta. Given the current ecological state of the Delta and the complexity of the issues there, it is critical that a project of this magnitude be fully coordinated with other efforts to better protect aquatic resources in the Delta.

We are also concerned that the public review process, including issuance of the draft NEPA document and the Corps PN, was completed without full disclosure of monitoring and adaptive management. Because the applicant has designed the project to be a demonstration, both the monitoring plan and the adaptive management plan are integral parts of the project. Without these plans, it is impossible to determine the potential scope of impacts, including impacts to listed species. For example, it is unclear how gate operations will be altered if there are unanticipated effects or how interspecies trade-offs will be balanced. Comprehensive monitoring and adaptive management plans will need to be developed before any permits are issued for this project.

III. Aquatic Resources of National Importance (CWA 404(q))

The project site is in the 1,150-square mile Sacramento-San Joaquin Delta (Delta), a triangular-shaped region of land and water at the confluence of two of California's major river systems- the Sacramento and San Joaquin. Waters of these rivers join two smaller tributaries, the Mokelumne and Cosumnes Rivers, to form a maze of immensely productive estuarine waterways and wetlands that drain more than 40 percent of California's surface area[2]. Old River and Connection Slough, located in the central Delta, are an integral part of this Delta system.

Fresh water moving through the Delta waterways is channeled into federal, state, and local conveyance systems to supply the municipal drinking water needs of 23 million Californians and support approximately four and a half million acres of California agriculture[3]. Recreation activities such as boating, fishing, and duck hunting generate millions of recreation trips to the Delta every year. Though considerably degraded over the last 160 years, the Delta also hosts a rich diversity of flora and fauna; 750 species of plants, fish, and wildlife are found there. Several endangered and threatened species are found in the Delta, including delta smelt, steelhead, spring-run Chinook salmon, winter-run Chinook salmon, giant garter snake, valley elderberry longhorn beetle and riparian brush rabbit. Two-thirds of the State's salmon pass through Delta

[2] Lund, J., Hanak, E., Fleenor, W., Howitt, R., Mount, J., and Moyle, P. (2007) Envisioning Futures For the Sacramento-San Joaquin Delta. Public Policy Institute of California.
[3] State of the San Francisco Bay-Delta Estuary (2006). Science & Stewardship. Proceedings

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waters, and at least half of its Pacific Flyway migratory water birds rely on the region's wetlands[4].

The Delta ecosystem has undergone significant changes over the past century. Over 95% of the historic Delta tidal wetlands have been converted to a patchwork of subsided farmed islands and constructed, straightened, and deepened channels[5]. Many Delta waterways suffer from poor water quality, including low dissolved oxygen, and elevated levels of pesticides, salinity, trace metals, and organic carbon. The central Delta has been listed as impaired on the CWA 303(d) list for numerous pollutants including DDT, diazinon, exotic species, pesticides, and mercury[6]. In addition, Old River has been listed as impaired for low dissolved oxygen. Populations of delta smelt, striped bass, and other pelagic organisms have abruptly declined over the last few years illustrating declining ecosystem stability. While the cause of this decline is not currently known, likely causes include declining food availability, recruitment, habitat quality, and increased mortality[7].

On September 28, 2006, Governor Schwarzenegger signed Executive Order S-17-06. This Order required the development of a Delta Vision that articulates possible alternative futures for the Delta region and provides a sustainable management strategy. This process was completed in 2008 with a collection of recommendations for long-term management of the Delta. In his Executive Order, the Governor referred to the Delta as "a unique natural resource of local, state and national significance."

In light of the overall importance of the Delta and the joint State and Federal interests in these unique resources, EPA believes the aquatic resources of the Delta region are "aquatic resources of national importance."

IV. Compliance with the CWA 404 (b)(1) Guidelines

The purpose of the Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. These goals are achieved, in part, by controlling discharges of dredged or fill material (40 CFR 230.1(a)). Fundamental to the Guidelines is the principle that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that there is no less environmentally damaging practicable alternative that achieves an applicant's project purpose. In addition, no discharge can be permitted if it will cause or contribute to significant degradation of the waters of the United States. The applicant is proposing to install two temporary gate structures in Old River and Connection Slough to reduce delta smelt entrainment in CVP and SWP intake facilities. Given the extent of impacts associated with the proposed activities, the applicant bears the burden for clearly demonstrating that the preferred alternative is the Least Environmentally Damaging Practicable Alternative

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[4] Lund, J., Hanak, E., Fleenor, W., Howitt, R., Mount, J., and Moyle, P. (2007) Envisioning Futures For the Sacramento-San Joaquin Delta. Public Policy Institute of California.

[5] The Bay Institute (1998). From Sierra to the Sea: The Ecological History of the San Francisco Bay-Delta Watershed.

[6] 2006 CWA Section 303(d) List of Water Quality Limited Segments. http://www.swrcb.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml

[7] Interagency Ecological Program (2008). Pelagic Organism Decline Progress Report: 2007 Synthesis of Results.

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(LEDPA) that achieves the overall project purpose while not causing or contributing to significant degradation of the aquatic ecosystem.

LEDPA – 40 CFR 230.10(a)

Identification of the LEDPA results from an alternatives analysis that estimates the direct, indirect, and cumulative impacts to jurisdictional waters. Project alternatives that are not practicable and do not meet the project purpose are eliminated. The LEDPA is the remaining alternative with the fewest impacts to aquatic resources, as long as it does not have other significant adverse environmental consequences. The DEA prepared by the Bureau of Reclamation evaluated 6 project alternatives and a no-build alternative.

Project Purpose

The first step in completing an alternatives analysis is the project purpose statement. The PN describes the overall project purpose as, "reduce the entrainment of federally listed species in the SWP and CVP water export facilities." It is not clear from this stated purpose whether increasing water exports is a component of the project. The project summary provided in the July 2009 CALFED Summary Document clearly states that the project purpose is to provide equal or improved protection to delta smelt with higher than the minimum allowed water exports[8]. Yet, neither the PN nor the DEA discuss how water exports will or will not change under the proposed project. In addition, the DEA states that the project is intended to be an experimental project designed to test hypotheses concerning delta smelt movement in relation to turbidity. However, this purpose is not stated in the overall project purpose in PN. The overall project purpose needs to be clearly stated as it will affect the range of alternatives considered as well as the development of a comprehensive monitoring and adaptive management plan.

Alternatives Analysis

In the DEA a number of alternatives were analyzed including: 2-gates, 4-gates, weir installation in the south Delta, re-operation of Clifton Court Forebay, and non-structural barriers (i.e., bubble curtains) as well as various gate design alternatives. Of the alternatives examined, the 2-gates alternative had the fewest environmental impacts while still providing entrainment reduction, and was therefore identified as the preferred alternative by the applicant. All of the alternatives examined created some form of a barrier that restricted delta smelt movement. Given the project purpose stated in the PN, it is unclear whether the applicant has conducted an appropriate alternatives analysis. If the project purpose is strictly to reduce delta smelt entrainment, it appears additional alternatives should have been examined. In addition, it is unclear why some of the alternatives examined were found to be ineffective at providing delta smelt protection (e.g., Clifton Court Forebay Re-Operations).

We believe that more information and subsequent analysis of that information will be necessary to identify the LEDPA for the stated project purpose. As part of their analysis, the applicant should consider non-barrier alternatives to reduce delta smelt entrainment. This type of alternative may be practicable, and may have fewer environmental impacts.

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[8] CALFED (2009). Science Review of the Two Gates Project. http://www.science.calwater.ca.gov/events/reviews/review_2gates.html

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Impact Assessment
The scale of the proposed project and the magnitude of potential impacts require a detailed evaluation of direct, secondary, and cumulative effects resulting from each of the alternatives considered. Consistent with program guidance and practice, evaluation of project impacts should be directly proportional to the magnitude of impacts to aquatic resources. Fewer impacts to aquatic resources would require a less comprehensive alternatives analysis.

Section 230.6 of the Guidelines also emphasizes that, when making determinations of compliance with the Guidelines, users "must recognize the different levels of effort that should be associated with varying degrees of impact and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity."[9]

The magnitude of potential impacts described in Section I of these detailed comments is such that the Corps and EPA must complete a more comprehensive demonstration of compliance with the Guidelines than is possible with the information provided by the applicant.

The applicant has not fully documented indirect and cumulative impacts that may result from the proposed project. The project will alter the flows not only in Old River and Connection Slough, but throughout the central Delta. The DEA documents changes to flow, water quality, and fish movement in surrounding areas when the gates are closed; however, the DEA states that gates will have a negligible effect when open. It does not appear that the hydrodynamic models were run for months when the gates would be open (i.e., summer and early fall) and it is unclear why the applicant believes there will be negligible impacts from the open gates. Because the gates structures themselves will severely constrain channel width, it is likely that water flow, height, and quality as well as fish movement will be impacted even when the gates are open. Based on the information in the DEA, it does not appear potential impacts from the open gate structures have been fully considered.

With regard to cumulative impacts, the applicant's evaluation should include the combination of past, present, and reasonably foreseeable direct and indirect effects to the Delta. The DEA discusses a number of projects occurring in Delta, but only provides minimal analysis on the cumulative direct and indirect impacts of these projects. The Delta ecosystem has been severely affected by numerous development, infrastructure, water diversion, and flood control projects. Any applicant proposing to further alter flow in this ecosystem needs to fully consider the cumulative impacts of the proposed project.

In addition to the concerns regarding impact analysis described above, we are concerned about the modeling used to support the proposed project. It its review of the project, CALFED identified serious shortcomings in both the smelt behavior model and the turbidity model[10]. It does not appear that the applicant has addressed the concerns and recommendations presented by

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[9] Regulatory Guidance Letter 93-02, Subject: Guidance on Flexibility of the 404(b)(1) Guidelines and Mitigation Banking.

[10] CALFED (2009). Science Review of the Two Gates Project. http://www.science.calwater.ca.gov/events/reviews/review_2gates.html

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CALFED and at this time it is unclear whether the modeling is sufficient to support the proposed project.

Water Quality, Toxic Effluent, and Endangered Species – 40 CFR 230.10(b)

The central Delta has been listed as impaired on the CWA 303(d) list for numerous pollutants including, DDT, diazinon, exotic species, pesticides, and mercury. In addition, Old River has been listed as impaired for low dissolved oxygen. The proposed project could have adverse impacts to water quality in Old River, Connection Slough, and the surrounding channels. The DEA states that gate closures may result in changes to water quality, but that those changes would be small because the gates would be closed for relatively short periods. However, the operations schedule includes plans to close the gates for up to 10 hours per day in Old River and 20 hours per day in Connection Slough. It appears from this schedule that the water quality impacts could be more severe than what was presented in the DEA. In addition, the absence of an adaptive management plan makes it unclear how gate operations may be changed should the project have unintended water quality impacts. The applicant will need to more fully analyze potential water quality impacts that could occur from the proposed project, both in the vicinity of the gates and in the larger central Delta.

The proposed project could result in significant adverse impacts to endangered and threatened species in the Delta. Several endangered or threatened fish species live in the Delta including, green sturgeon, steelhead, and delta smelt. Both Old River and Connection Slough are migration corridors for multiple salmonid species, including Chinook salmon and steelhead. Under the proposed operations schedule, the gates would be closed for varying time periods from December through March, which coincides with the timing of both adult steelhead migration and juvenile steelhead outmigration. It is unclear whether the applicant has fully examined the potential effects gate operations may have on salmonid migration. The DEA states that salmonid migration would not be impacted when the gates are open, but does not fully discuss the impacts of gate closures on steelhead migration. Given the declining salmonid and pelagic fish populations in the Delta, it is critical that all potential impacts to these species be fully analyzed and disclosed.

In addition to gate operation impacts, the gate structures themselves (even when open) are likely to have adverse impacts on listed fish species. The structures will confine the width of the channel to 75 feet in Old River and 60 feet in Connection Slough. In order to pass the structures, fish will have to move away from the banks into the center of the channel. This behavior modification will likely increase the predation risk to individuals passing through the gates. Furthermore, the structures may create an attractive nuisance where predatory species congregate. The DEA states that salmonid predation may increase around the gate structures and that predator monitoring will occur as part of the project. The DEA also states that, should predators become a problem, selective removal methods would be implemented. However, because the adaptive management plan is not available, it is unclear how decisions will be made regarding the definition a predator "problem," alteration of gate operations if there are unanticipated effects to other species, or how trade-offs between delta smelt and other species will be balanced.

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Avoidance, Minimization, and Compensation – 40 CFR 230.10(d)

Avoidance and minimization of direct, indirect and cumulative impacts to the aquatic ecosystem must be followed by compensatory measures if a loss of aquatic functions and/or acreage is unavoidable. Since compensatory mitigation is intended only for unavoidable impacts to waters after the LEDPA has been determined, it would be premature to evaluate any compensatory mitigation proposal before compliance with 40 CFR 230.10(a) is established. At this time the applicant has not demonstrated that impacts have been avoided and minimized to the maximum extent practicable. In earlier sections of these detailed comments, we have established that there may be other alternatives to achieve the stated project purpose and that the impacts for the preferred alternative have not been fully analyzed.

The applicant has stated that all structures will be removed at the end of the 5- year period and that the channel bottoms will be restored. It is unclear if the applicant intends to present these impacts as temporary; however, given the length of time (5 years) the structures will be in place, all of the impacts associated with this project should be considered permanent and mitigated for as such. In addition, the applicant will need to clarify to what degree the channel bottom will be restored. Even if it is feasible to remove 21,000 cubic yards of crushed rock from the channel and restore the bottom to peat after completion of the project, it appears likely the channel bottom will be permanently left in an altered state compared to pre-project conditions. The mitigation proposal will need to fully consider and compensate for this permanent loss of acreage and function.

According to the PN, the applicant proposed to purchase credits from an approved mitigation bank. However, the PN does not state which mitigation bank will be used or what type of credits will be purchased. The proposed project will result in permanent impacts to 0.16 acres of tidal wetlands and 1.81 acres of tidal other waters. Any mitigation plan must comply with the 2008 Federal Compensatory Mitigation Rule (40 CFR Part 230, Subpart J), emphasizing that compensatory mitigation should be developed using a watershed approach. Therefore, the applicant will need to give careful consideration to the ecosystem services these waters provide and choose an appropriate mitigation bank and credit types to compensate for any unavoidable impacts.

IV. Summary

Prior to granting a permit pursuant to Section 404 of the CWA, the Corps must determine that the project complies fully with EPA's 404(b)(1) Guidelines and the project is not contrary to the public interest.

At this point, there is not sufficient information to determine whether the proposed discharge complies with the substantive requirements in the regulations related to alternatives analysis, water quality, endangered species, significant degradation, and/or mitigation. In addition, we are concerned that the proposed project will result in navigation hazards, especially to residents of Discovery Bay, and urge the Corps to fully consider these impacts in your public interest review.

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Based on the information presented to date, the applicant has not demonstrated that the project complies with the restrictions to discharges under the Guidelines. We must therefore reaffirm our conclusion that there is presently insufficient information to make a finding of compliance, and we urge you to deny the application.

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